

THREE NEW SPECIES OF *KAPSA* (HEMIPTERA: CICADELLIDAE: TYPHLOCYBINAE) FROM CHINA¹

Yue-hua Song,² Can Li,^{2,3} and Zi-zhong Li²

ABSTRACT: In this paper, three new species of the genus *Kapsa* Dworakowska, 1972 from China are described and illustrated: *K. fangxianga* n. sp., *K. biprocessa* n. sp. and *K. arca* n. sp.

KEY WORDS: Hemiptera, Cicadellidae, Typhlocybinae, leafhoppers, *Kapsa*, new species, China

The leafhopper genus *Kapsa* Dworakowska (1972) belongs to the tribe Erythroneurini (Typhlocybinae) with *Typhlocyba farcifrons* Jacobi, 1941 as its type species. Until now, twenty-one species are known in the world (Chiang and Knight, 1990; Dworakowska, 1972, 1979, 1980, 1981a, 1981b, 1994; Dworakowska, Nagaich and Singh, 1978; Dworakowska and Sohi, 1978; Sohi and Mann, 1992). In this paper, three new species are described and illustrated from Guizhou province, China. The type specimens of the new species are deposited in the Institute of Entomology, Guizhou University, Guiyang, Guizhou (IEGU).

SYSTEMATIC ENTOMOLOGY

Kapsa Dworakowska, 1972

Kapsa Dworakowska, 1972. Bull. Acad. Pol. Sci. Cl. II. Ser. Sci. Biol. 20(6): 402.

Type Species: *Typhlocyba farcifrons* Jacobi, 1941 (by original designation).

This genus is very closely related to *Empoascanara* Dworakowska, subgenera *Empoascanara* Distant and *Kanguza* Dworakowska, but with narrower head and face and broader pronotum. Male pygofer, aedeagus, connective and abdominal apodemes similar to those of *Empoascanara*, but subgenital plate with very long macrosetae and microsetae on dorsal margin not grouped. Style with secondary extension.

Distribution: India (Sikkim); Sri Lanka; Indonesia; Nepal; New Guinea; Vietnam; China (Taiwan, Sichuan, Guizhou) (Chiang and Knight, 1990; Dworakowska, 1972, 1979, 1980, 1981a, 1981b, 1994; Dworakowska, Nagaich and Singh, 1978; Dworakowska and Sohi, 1978; Sohi and Mann, 1992).

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² Institute of Entomology, Guizhou University, Guiyang, Guizhou, 550025, China. E-mail: songyuehua@163.com

³ Department of Biology & Engineering, Guiyang University, Guizhou, 550005, China. E-mail: lican790108@163.com. Corresponding author. (ZZL) e-mail: lizizhong38@163.com

***Kapsa fangxianga* Song and Li, Z. Z., NEW SPECIES**
(Figures 1-9, 28)

Type Locality: CHINA, Guizhou, Fangxiang, Mt. Leigong.

Description: Color: Body milky. Vertex (Fig. 1) with pair of milk yellow irregular streaks. Eyes black. Pronotum (Fig. 1) light brown, median area with dark brown arched stripe; scutellum brownish, transverse impression distinct. Dorsal surface of abdomen yellowish, ventral surface dark brown medially; legs light yellow. Forewing and hindwing transparent.

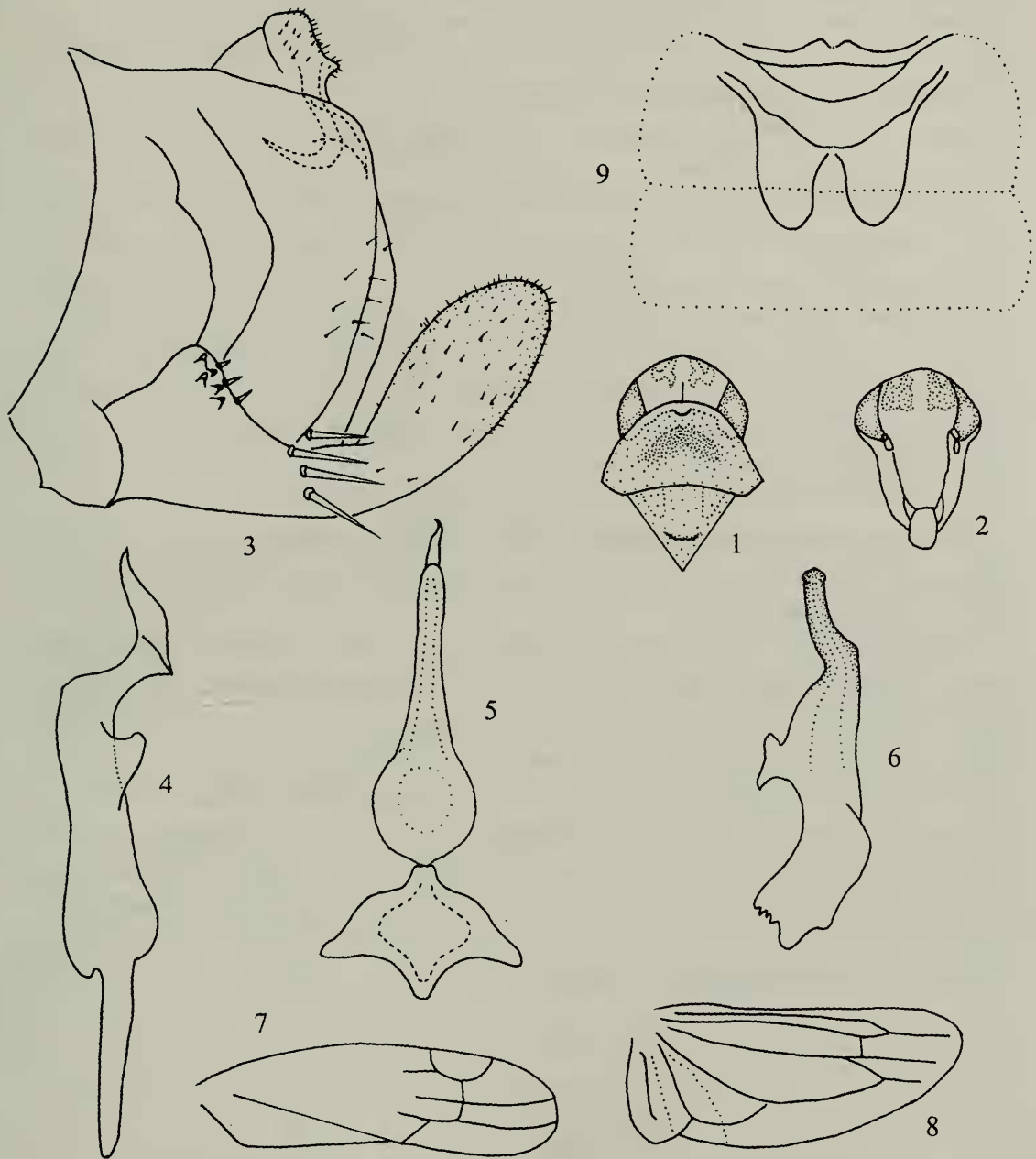
Structure: Body length males 2.7-2.9 mm, females 2.9-3.0 mm. Head (Figs. 1, 2) long, slightly narrower than pronotum, anterior margin bluntly produced. Coronal suture distinct, length about 0.5x median length of vertex. Face (Fig. 2) long and narrow, frontoclypeal area gently swollen, anteclypeus expanded at apex. Pronotum broad, anterior margin rounded and posterior margin shallowly concave; scutellum slim, triangular, little longer than median length of pronotum. Forewing (Fig. 7) with 4 apical cells, 1st largest; 2nd slender; 4th smallest, nearly semicircular.

Male Genitalia: Pygofer side (Fig. 3) broad, with numerous microsetae at apex, dorsal appendage shorter, hook-like. Anal tube appendage (Fig. 3) crescent-like apical, short at base, it bends towards dorsal margin. Subgenital plate (Fig. 3) deeply concave medially, expanded at apex, with four long macrosetae on outer lateral surface; several peg-like setae at base. Style (Fig. 4) apex sinuate; base slender, with clear lamellate process subapically. Aedeagal shaft (Fig. 5) long, with a small process, teeth-like (Fig. 6), preatrium expanded, gonopore apical. Connective about M- or Y-shaped. Abdominal apodemes (Fig. 9) reaching 4th segment, wide and short, finger-like. Female genitalia (Fig. 28): ovipositor extending about a fifth its length beyond pygofer. Seventh sternite (Fig. 28) posterior margin sinuate, and sharp in center.

Material Examined: Holotype, male: Guizhou: Fangxiang, Mt. Leigong, 26°43'N 108°20'E, 900-1100m., 17-IX-2005, coll. Yuehua Song. Paratypes: seven males, ten females, same data as holotype.

Diagnosis: This new species is most similar to *K. simlensis* Dworakowska, Nagaich and Singh, 1978 (see Dworakowska, Nagaich and Singh, 1978), but can be distinguished from the latter by the following characteristics: 1) the new species vertex with pair of irregular spots at anterior margin, each one with three branches, and the spots of *K. simlensis* crescent-like; 2) *K. simlensis* aedeagal shaft with scale-like sculptures at apex, but the new species without that; 3) the new species connective nearly M- or Y-shaped, is not the same as *K. simlensis*.

Etymology: This new species is named after its locality (Fangxiang). It is feminine in gender.



Figures 1-9. *Kapsa fangxianga* n. sp. 1. Head and thorax, dorsal view. 2. Face. 3. Pygofer side and subgenital plate, left lateral view. 4. Style, ventral view. 5. Aedeagus and connective, ventral view. 6. Aedeagus, right lateral view. 7. Right forewing. 8. Hindwing. 9. Abdominal apodemes.

***Kapsa biprocessa* Song and Li, Z. Z., NEW SPECIES**
(Figures 10-18, 29)

Type Locality: CHINA, Guizhou, Sandu.

Description: Color: Crown (Fig. 10) brownish-yellow, with some yellowish spots and lateral symmetry. Eyes dark brown. Body light yellow. Forewing brownish-yellow and hindwing transparent.

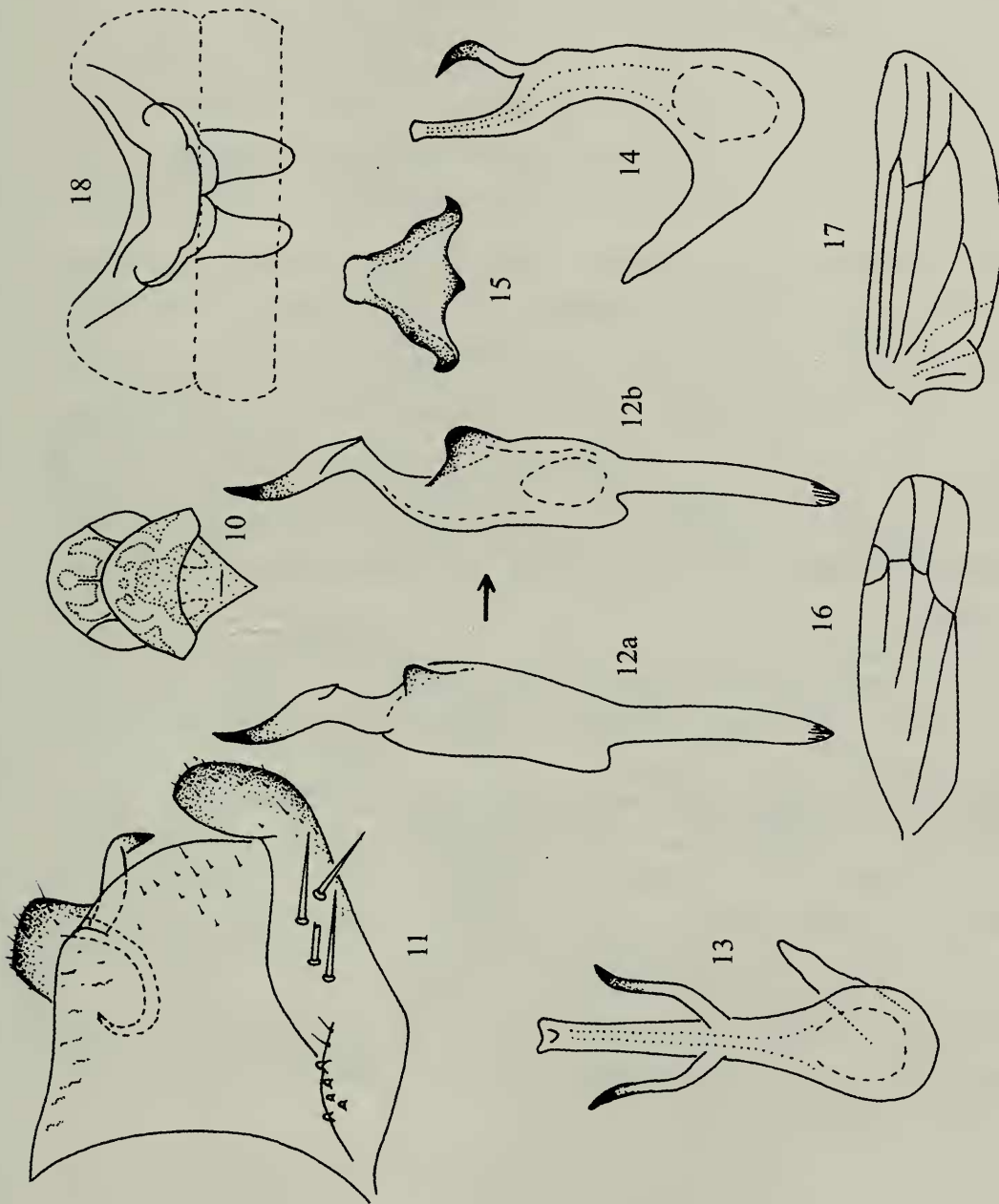
Structure: Body length males 2.5-2.6 mm, females 2.5-2.8 mm. Structural characters as in *K. fangxianga*.

Male Genitalia: Dorsal pygofer appendage (Fig. 11) with a nearly triangular, very sharp apex. Anal tube appendage (Fig. 11), a little longer than that of *K. fangxianga*. Subgenital plate (Fig. 11) slightly swollen at base and concave near median, apex pocket-like, with four (one of them broken) macrosetae on outer lateral surface, several microsetae and some peg-like setae at base. Style (Figs. 12a, 12b) as in *K. fangxianga*. Aedeagal shaft (Figs. 13, 14) with pair of long processes, gonopore near apex. Connective nearly Y-shaped. Female genitalia (Fig. 29): ovipositor shorter than that of *K. fangxianga*. Seventh sternite (Fig. 29) posterior margin sinuate, nearly truncate in center.

Material Examined: Holotype, male: Guizhou: Sandu, 26°N 107°86'E, 984m., 27-X-1984, coll. Zizhong Li. Paratypes: three males, fourteen females, same data as holotype.

Diagnosis: This new species is related to *K. elscinta* Chiang and Knight, 1990 (see Chiang and Knight, 1990), but differentiated in that *K. elscinta* has: 1) the new species aedeagal shaft with pair of long processes, each one S-shaped (Figs. 13, 14), the processes of *K. elscinta* very short, teeth-like; 2) the new species abdominal apodemes (Fig. 18) much shorter, finger-like, but that of *K. elscinta* longer, extending to 5th sternite; 3) the new species crown with the unique yellowish patches (Fig. 10), but *K. elscinta* without any patches on head.

Etymology: The name of the new species refers to the pair of processes of the aedeagal shaft (Figs. 13, 14), it is derived from the Latin prefix "bi-" (two), plus "process," and it is feminine in gender.

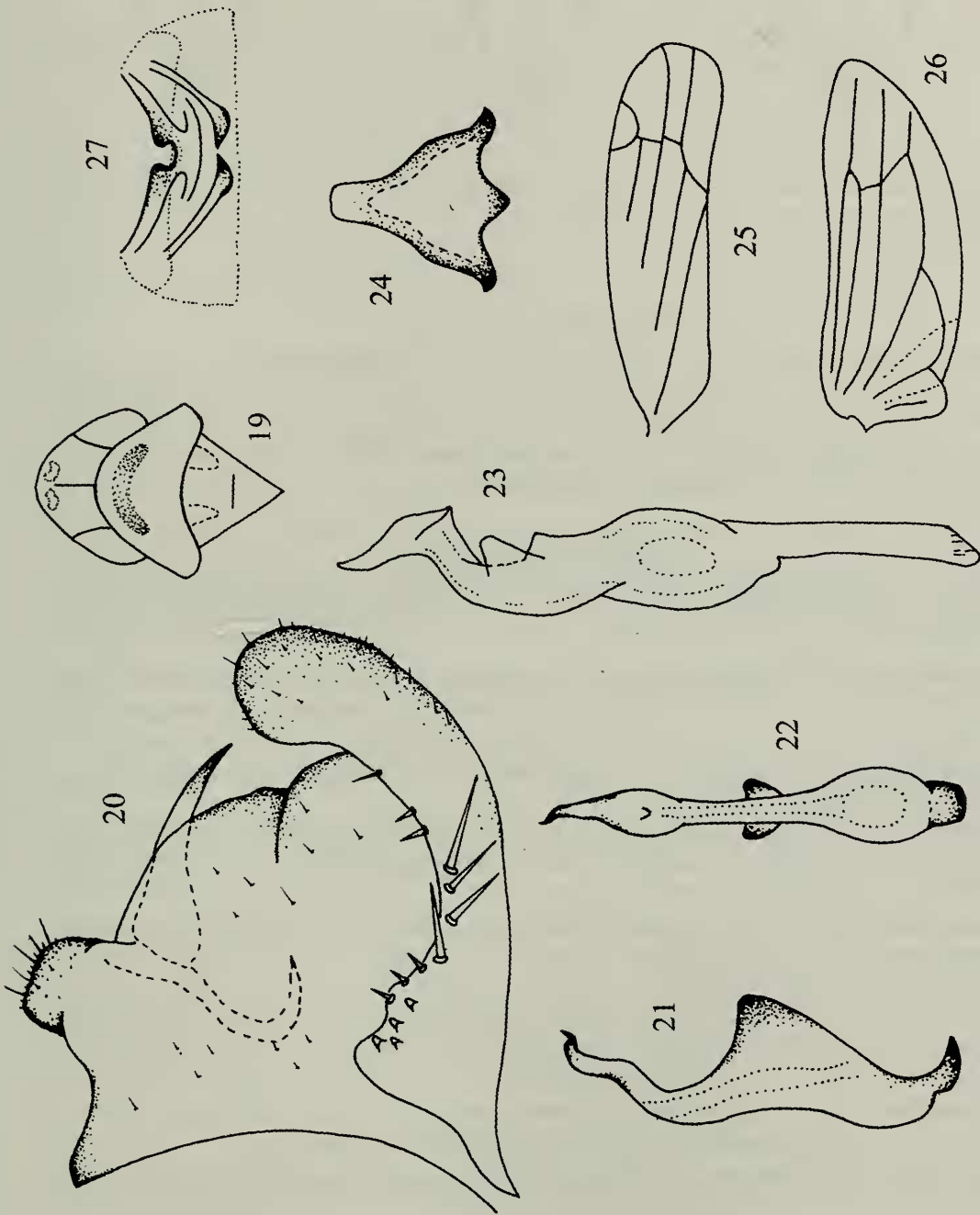


Figures 10-18. *Kapsa biprocessa* n. sp. 10. Head and thorax, dorsal view. 11. Pygofer side and subgenital plate, left lateral view. 12a. Style, ventrolateral view. 12b. Style, ventrolateral view. 13. Style, ventral view. 14. Aedeagus and connective, ventral view. 15. Connective, right lateral view. 16. Right forewing. 17. Hindwing. 18. Hindwing, apodemes.

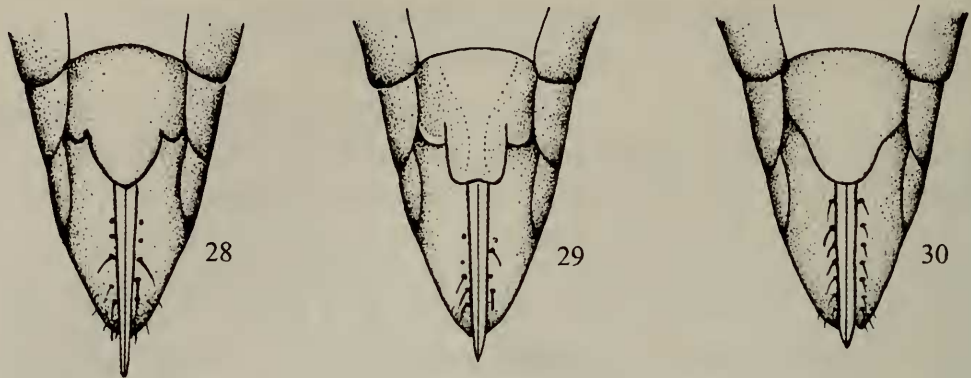
***Kapsa arca* Song and Li, Z. Z., NEW SPECIES**

(Figures 19-27, 30)

Type Locality: CHINA, Guizhou, Luodian.**Description:** Color: Body brownish except yellowish abdomen. Crown with pair of small patches near anterior margin, milky yellow. Eyes black. Frontoclypeal area thin, long, brownish. Hindwing transparent.**Structure:** Body length males 2.7-2.8 mm, females 2.9-3.0 mm. Crown (Fig. 19) width slightly less than greatest width of pronotum. Vertex little produced, coronal suture distinct. Vertex median length about 2/3 times pronotum. Pronotum (Fig. 19) very broad, with arched brown band near anterior margin; anterior margin convex, posterior margin concave. Scutellum median length subequal to that of pronotum.**Male Genitalia:** Pygofer side (Fig. 20) broad, with numerous microsetae. Dorsal appendage long (Fig. 20), extending about half its length beyond posterior margin of pygofer. Anal tube appendage long, apex hook-like, bends caudally. Subgenital plate with four medial macrosetae, other structural characters as in *K. fangxianga*. Aedeagal shaft (Figs. 21, 22) long, sinuate at apex, S-shaped. Gonopore (Fig. 22) subapical. Connective (Fig. 24) about Y-shaped, as in that of *K. biprocessa*, but with a longer body. Abdominal apodemes extremely small, just in 3rd sternite. Female genitalia (Fig. 30): ovipositor extending a little of its length beyond pygofer. Seventh sternite (Fig. 30) posterior margin sinuate, arcuate in center.**Material Examined:** Holotype, male: Guizhou: Luodian, 25°21'N 105°55'E, 800m., 3-VI-1981, coll. Zizhong Li. Paratypes: three males, seven females, same data as holotype; Four males, six females, Guizhou: Weng'an, 27°08'N 107°48'E, 1028m., 18-VI-1981, coll. Zizhong Li.**Diagnosis:** This new species resembles *K. dolka* Dworakowska, 1979 (see Dworakowska, 1979), but differs from the latter by the following characteristics: 1) the new species with an arc-like brown band on the pronotum (Fig. 19), *K. dolka* without that, 2) the new species gonopore subapical (Fig. 22), but that of *K. dolka* apical; 3) the new species connective about Y-shaped, with body as long as arms (Fig. 24), and that of *K. dolka* nearly M-shaped.**Etymology:** This species is named for the arc-like brown band on the pronotum (Fig. 19), it is derived from the Latin word "arc" (shaped like a bow), and it is feminine in gender.



Figures 19-27. *Kapsa arca* n. sp. 19. Head and thorax, dorsal view. 20. Pygofer side and subgenital plate, left lateral view. 21. Aedeagus, left lateral view. 22. Aedeagus, ventral view. 23. Style, ventral view. 24. Connective. 25. Hindwing. 26. Right forewing. 27. Abdominal apodemes.



Figures 28-30. Female terminal segments, ventral view. 28. *Kapsa fangxianga* n. sp. 29. *K. biprocessa* n. sp. 30. *K. arca* n. sp.

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